

Legal Medicine

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Other Faculty Members

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Major Scientific Interests of the Group

We aim to enhance forensic practices through the development of innovative technologies or tools in conjunction with the latest molecular biological knowledge. The primary focus is on genetic and epigenetic analyses of postmortem tissues or biological samples left at the crime scene. Additionally, broader surrounding matters are within the scope of our research, including toxicological analysis, forensic imaging and medical jurisprudence.

Projects for Regular Students in Doctoral or Master's Programs

- 1) Introduction of genetic analysis into forensic practice
- 2) Development of postmortem diagnostic methods based on molecular biological techniques
- 3) Invention of detection devices for various toxicants
- 4) Research on medical jurisprudence and the history of forensic medicine

Study Programs for Short Stay Students (one week – one semester)

- 1) Analysis of postmortem computed tomography images
- 2) Application of drug screening techniques for forensic samples

Selected Publications

- 1) Sugasawa T, Hirokawa A, Otani N, Kanki Y, Nguyen KD, Takemasa T, Watanabe K, Takeuchi Y, Yahagi N, Takahashi Y. Detection Method for Gene Doping in a Mouse Model Expressing Human Erythropoietin from Adeno-Associated Virus Vector-9. *Genes* (Basel) 15:709, 2024.
- 2) Seki T, Hsiao YY, Ishizawa F, Sugano Y, Takahashi Y. Establishment of a random forest regression model to estimate the age of bloodstains based on temporal colorimetric analysis. *Leg Med* (Tokyo) 69:102343, 2024.
- 3) Takahashi Y, Fukuda H, Hayakawa A, Sano R, Kubo R, Kawabata-Iwakawa R, Nakajima T, Ishige T, Tokue H, Asano K, Seki T, Hsiao YY, Ishizawa F, Takei H, Kominato Y. Postmortem genetic analysis of 17 sudden cardiac deaths identified nonsense and frameshift variants in two cases of arrhythmogenic cardiomyopathy. *Int J Legal Med* 137:1927-1937, 2023.
- 4) Sugano Y; Takahashi Y. Kuniyoshi Katayama the founder of forensic medicine in Japan. *Rechtsmedizin* 33:223-228, 2023.
- 5) Ichikawa-Kaji Y, Ishizawa F, Nishiyama R, Tachikawa H, Uemura N, Moriuchi Y, Hsiao YY, Moriyasu T, Suzuki T, Takahashi Y, Inomata A. Development of a detector tube for screening tadalafil and its analogues in adulterated sexual enhancement products. *Drug Test Anal* 15:345-360, 2023.
- 6) Takahashi Y, Maynard KR, Tippani M, Jaffe AE, Martinowich K, Kleinman JE, Weinberger DR, Hyde TM. Single molecule in situ hybridization reveals distinct localizations of schizophrenia risk-related transcripts SNX19 and AS3MT in human brain. *Mol Psychiatry* 26:3536-3547, 2021.